

Estimations of Magnitude of Nova Aurigæ, made with the Barclay Equatoreal, at the Radcliffe Observatory, Oxford.

(Communicated by E. J. Stone, Esq., M.A., F.R.S., Radcliffe Observer.)

	Observer.	Power of Eye-piece used.	Observed Magnitude of <i>Nova</i> .	Comparison Stars.	Remarks.
1892. Sept.	R.	85	9.5	<i>a, k, h</i>	Moonlight.
	R.	"	9.5	<i>a, k, h</i>	
	R.	"	9.4	<i>a, k, h</i>	<i>Nova</i> possibly a trifle brighter than on September 13.
	R.	"	9.6	<i>a, k, h</i>	
	W.	"	9.9	<i>a, k, h, g, i</i>	
	R.	"	9.4	<i>a, k, h</i>	
	R.	"	9.6	<i>a, k, h</i>	
Oct.	R.	"	9.5	<i>a, k, h</i>	Moonlight.
	R.	"	9.5	<i>a, k, h</i>	
	R.	"	9.5	<i>a, k, h</i>	Moon near. <i>Nova</i> at times nearly as faint as <i>a</i> .
	W.	"	10.0	<i>a, k, h, g, i</i>	
D	"	100	9.9	<i>c, g, i</i>	Images not sharp with any power, but ξ is visible.
	"	180	9.9	<i>a, k, h, g, i</i>	

Estimations of Magnitude of Nova Aurigæ.—(continued).

	Observer.	Power of Eye-piece used.	Observed Magnitude of Nova.	Comparison Stars.	Remarks.
1892. Oct. 18 II	R.	85	9.6	<i>a, k, h</i>	
19 II	W.	"	9.7	<i>a, k, h, g, i</i>	The contrast between the Nova and <i>a</i> is, I believe, stronger to-night than on October 17.
25 II	R.	"	9.8	<i>a, k, h</i>	Nova's image is dull.
29 II	R.	"	9.7	<i>a k, h</i>	The image of the Nova is rather dull.
"	"	180	9.6	<i>a, k, h</i>	There is a slightly greater difference in magnitude between the Nova and <i>a</i> with power 180 than with 85.

Observers: W., Mr. W. Wickham; R., Mr. W. H. Robinson.

The comparison star *h* was generally observed to be 0.1 of a magnitude brighter than *k*. The exceptions were:—September 24, fainter than *k*; September 30, equal to *k*; October 19, 0.2 fainter than *k*; October 25 and 29, equal to *k*.

The adopted magnitudes of the comparison stars are given in the *Monthly Notices* of the R.A.S., vol. lii., page 431, and depend fundamentally upon the magnitude assigned by Argelander to the star *k* (D.M. + 30°, No. 924), viz. 9.5.

Radcliffe Observatory, Oxford:
1892 November 10.

Nova Aurigæ. By E. E. Barnard, M.A.

The first time I ever saw the object with the 36-inch was 1892 August 19. As soon as I saw it I was struck with the fact that it was really a very small nebula, "some 5'' in diameter," with a 10th-magnitude stellar nucleus. The nebulosity was very dense and whitish, and with a low power might escape notice. A setting of the wires gave the diameter of the nebulosity as 3''. The star nucleus was from 0.^m1 to 0.^m2 less than the star F of Mr. Burnham's diagram (*Monthly Notices*, vol. lii., No. 6). But with low power, as a whole, the nebula and nucleus were brighter than that star. At every observation since the nebulosity has been a striking object—the colour of nebula and nucleus being a bluish white—quite in contrast to the star F, which has appeared slightly yellow.

The light seems to have been declining very slowly. At the last observation, October 23, the nucleus was fully one magnitude less than F, and the nebulosity seemed less bright and was smaller in extent. The bluish-white colour was still strikingly marked.

To detect any motion perpendicular to the line of sight I have repeated Mr. Burnham's measures of last spring with two of his stars, so selected as to show motion if it existed.

Here are the observations, all made with the micrometer of the 36-inch:—

A and E.			A and F.		
1892·64	323°3	74''24	1892·64	32°6	85''03
·66	323°5	74'41	·66	32°8	84'76
·67	323°5	74'64	·67	32°7	84'87
·70	323°5	74'75	·70	32°6	85'04
1892·67	323°5	74'51 B4n		32°7	84'92 B4n

Mr. Burnham's measures of the same stars are:—

A and E.			A and F.		
1892·14	323°6	74''24 B3n	1892·12	32°4	85''05 B4n

A comparison of these measures do not show with certainty any motion in A. But the distance A E seems to be increasing. If this is real, and it seems to be so, it is strange that before my observations, it is not apparent, as compared with those of Mr. Burnham. Measures will be made to decide whether this motion is real, and if so, as to whether it is in A or E.

Mount Hamilton:
1892 October 24.